



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PDR

FEB 07 1994

International Technical Services, Inc.
ATTN: Dr. Hideko Komoriya
420 Lexington Avenue
New York, New York 10170

Dear Mr. Komoriya:

Subject: Task Order No. 22, EMF-92-139(P), "Siemens Realistic L Bloca ECCS Evaluation Methodology, under Contract No. NRC-03-90-027

In accordance with Section G.6, "Task Order Procedures," of the subject contract, this letter definitizes Task Order 22. This effort shall be performed in accordance with the enclosed Statement of Work and the contractor's proposal dated December 17, 1993, incorporated herein by reference.

Task Order 22 shall be in effect from the dated of this letter through October 31, 1994 with a cost ceiling of \$63,701.00. The amount of \$58,121.00 represents the total estimated reimbursable costs and the amount of \$5,580.00 represents the fixed fee.

Accounting data for Task Order 22 is as follows:

B&R No.:	4201915050
JOB No.:	L13184
APPN No.:	31X0200.420
RFPA No.:	20 94 061A
Obligates	\$63,701.00

The following individuals are considered to be essential to the successful performance of the work hereunder: Hideko Komoriya and Paul Abramson.

The issuance of this task order does not amend any other terms or conditions of the subject contract.

Your contacts during the course of this task order are:

Technical Matters:	Brian Thomas (301) 504-1210
Contractual Matters:	Sharlene McCubbin (301) 492-7764

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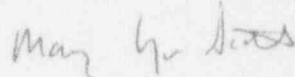
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Acceptance of this task order should be made by executing three copies of this document in the space provided and returning two copies to the Contract Administrator. You should retain the third copy for your records.

Should you have any questions regarding this matter, please contact Sharlene McCubbin, Contract Administrator, on (301) 492-7764.

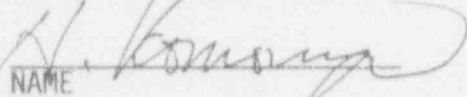
Sincerely,

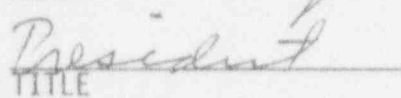


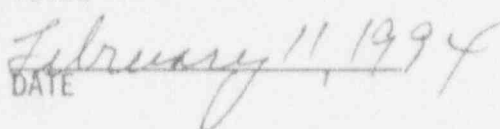
Mary Lynn Scott, Contracting Officer
Contract Administration Branch No. 1
Division of Contracts and
Property Management
Office of Administration

Enclosures:
As Stated

ACCEPTED: Task Order 22


NAME


TITLE


DATE

STATEMENT OF WORK
TASK ORDER 22

Title: Review of EMF-92-139(P), Siemens
Realistic LBLOCA ECCS Evaluation
Methodology

FIN: L-1318

B&R Number: 1505

Project Manager: Brian Thomas (FTS 504-1210)

Technical Monitor: Frank Orr (FTS 504-1815)

Estimated Level of Effort: About 15 professional staff-weeks
in fiscal year 1994

Projected Completion Date: May, 1995

Contractor: ITS

TAC Nos.: M85182, M84811, M84718, and M87010
through M87017

NRR Priority No.: 2

1. BACKGROUND

EMF-92-139(P) describes a Siemens Power Corporation (Siemens) best-estimate large break (LB) loss-of-coolant accident (LOCA) analysis methodology (Realistic Evaluation Model, REM) which would be used in the future to address 10 CFR 50.46 requirements for pressurized water reactor (PWR) designs. EMF-92-139(P) is a multi-volume document, including Volumes 1 through 3 and Volume 3, Supplements 1 through 7. These volumes and supplements were submitted in letters of September 14, 1992, October 9, 1992, December 1, 1992, and July 2, 1993. This methodology references ANF-90-145(P), "RODEX3 Fuel Rod Thermal-Mechanical Response Evaluation Model," which is being reviewed separately by the staff.

2. OBJECTIVE

The objective of this technical assistance task is to obtain expert technical services from the contractor to assist the staff in the review and determination of the acceptability of the submittal discussed above. When the review is completed and issues have been resolved, the contractor will provide a technical evaluation report (TER) which will be included in the staff safety evaluation report (SER) discussing the technical bases for the review findings.

3. TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

Expertise in thermal hydraulics and transient analysis, and in applied statistics is required for this review. Experience in dealing with large break LOCA analyses, expert knowledge of LBLOCA phenomena, and familiarity with best estimate methodologies and regulatory guidance are also required.

It is the responsibility of the contractor to assign technical staff, employees, subcontractors, or specialists who have the required educational background, experience, or combination thereof to meet both technical and regulatory objectives of the work specified in this SOW. The NRC will rely on representations made by the contractor concerning the qualifications of the personnel assigned to this task order including assurance that all information contained in the technical and cost proposals, including resumes, is accurate and truthful.

4. WORK REQUIREMENTS

The contractor will review the documentation describing the Siemens realistic LBLOCA methodology and provide recommendations with bases on the acceptability of the methodology for addressing 10CFR50.46 requirements. In the review, the contractor will consider the intended use of the methodology and recommend any restrictions or limitations to be placed on its use.

The contractor will review documentation and provide questions for Siemens response if necessary. Upon completion of the review of all EMF-92-139(P) volumes and supplements, and responses to questions the contractor will provide a TER with its recommendations regarding acceptability of the report.

Subtasks (and Projected Completion Dates)

Subtask 1 Acceptance Review and Contractor Assessment
 (by March 31, 1994)

The contractor should perform an initial acceptance review of documentation describing the Siemens best-estimate LBLOCA methodology. The purpose of this review is to determine if there are areas covered in the submittal which must be addressed prior to continuing with the detailed review of the documentation. In performing the review, the contractor should consider the recommendations of the Code Scaling Applicability and Uncertainty (CSAU) evaluation methodology and of NRC Regulatory Guide 1.157.

This subtask may also involve discussions at or in addition to a meeting with the vendor, at the arrangement of the NRC Technical Monitor, to clarify issues raised regarding the completeness of the submittal.

Based on the initial review of Subtask 1 for the submitted documentation, the contractor will provide to the NRC an assessment of the technical adequacy of

the proposed methodology for further review. This assessment may be verbal if the description of the methodology is sufficiently comprehensive in addressing the review criteria given above. However, if the assessment finds that the information provided in the submitted documentation is insufficient for continuance of the review, the contractor shall provide a written report to identify specific shortcomings which may be addressed in subsequent vendor documentation describing the methodology. The information provided in the assessment will be considered by the NRC in a final decision regarding review continuance. The NRC will accept a verbal assessment if the review is to be continued or a written assessment if the review is not to be continued.

Subtask 2 Initiate Review and Initial Questions (If review is continued)
(October 31, 1994)

If the NRC decides that the documentation describing the proposed methodology is sufficient for review, the contractor will commence an initial review of all documentation describing the methodology.

The review may involve discussions at or in addition to meetings with the vendor, at the arrangement of the NRC Technical Monitor, to clarify technical issues raised in the review of submittals.

Based on this initial detailed review the submitted documentation, the contractor will generate a set of questions on the correlations and models in the proposed methodology which will be sent to the vendor. The provision and acceptance by the technical monitor of these questions shall constitute the reporting requirement for this task (in addition to the monthly business letter report discussed in Section 6). Questions regarding code qualification and uncertainty analysis will be provided in Subtask 3 during Fiscal Year 1995, though it is anticipated that much of this material may also be covered in the Subtask 2 review. The questions should be specific and serve to clarify or obtain information on areas not fully discussed in the submittal. The questions should be as complete as possible to minimize the need further questions.

Preliminary discussions with the NRC Technical Monitor are encouraged.

Planned Future Work
(Fiscal Year 1995)
(Est. 25 prof. staff-weeks)

Subtask 3 Complete Initial Review and Review Questions
(March 15, 1995)

The contractor will complete the initial review of all volumes and supplements, not covered in the questions under Subtask 2, and prepare questions as needed. The provision and acceptance by the technical monitor of these questions shall constitute the reporting requirement for this task (in addition to the monthly business letter report discussed in Section 6).

Subtask 4 Final Review and Draft TER
 (About 1 month after resolution of all
 review issues - estimated date of Draft
 TER: May 10, 1995)

The contractor will thoroughly review licensee responses to questions provided in Subtasks 2 and 3. If necessary, additional questions may be generated to clarify or amend responses to the initial questions which are still not satisfactory. The review will also involve further discussions at or in addition to meetings with the vendor, at the arrangement of the NRC Technical Monitor, to clarify technical issues raised in the review. With resolution of remaining issues, the contractor shall prepare a draft technical evaluation report (TER) for the submitted documentation. The TER shall document the review effort, findings, conclusions, and recommendations on the acceptability of the Siemens best-estimate LBLOCA methodology. Care should be taken to avoid the inclusion of any licensee proprietary information in the Draft TER. The draft TER shall be prepared and sent to the NRC Technical Monitor for review and comment. The provision and acceptance by the technical monitor of this draft TER shall constitute the reporting requirement for this task (in addition to the monthly business letter report discussed in Section 6).

Subtask 5 Final TER
 (about 2 weeks after receipt of NRC
 Technical Monitor's comments)

Upon receipt of comments from the NRC Technical Monitor, the contractor shall prepare a final TER incorporating the Technical Monitor's comments. The TER should be in accordance with NRC Manual Chapter 3202, "Publication of Unclassified Regulatory and Technical Reports Prepared by NRC Contractor." For the TER, the contractor will submit one reproducible and four reproduced copies of the final report to the NRC Project Manager. The provision and acceptance by the technical monitor of this draft TER shall constitute the reporting requirement for this task (in addition to the monthly business letter report discussed in Section 6).

5. LEVEL OF EFFORT AND PERIOD OF PERFORMANCE

The level of effort for this task is estimated to be 40 professional staff weeks over a 17 month period. This is estimated to be comprised of 15 staff-weeks over a 15 month period in Fiscal Year 1994 and 25 staff-weeks over a ten month period in Fiscal Year 1995. The period of performance for Phase 1 is the effective date of this task order through October 31, 1994.

6. REPORTING REQUIREMENTS (Subtask 1)

(a) Written Assessment

A written assessment of the sufficiency of the initially submitted documentation for review may be required as discussed in Section 4, Subtask 1.

(b) Review Questions

Upon partial and full completion of the initial review, the contractor will submit requests for additional information based on the information reviewed as of those dates to the NRC Technical Monitor as discussed in Section 4, Subtasks 2 and 3 of this document. Additional questions will be provided as needed, as discussed in Section 4, Subtask 4.

(c) Draft TER and Final TER

The contractor shall provide a draft TER and a final TER as discussed in Section 4, Subtasks 4 and 5, respectively.

(d) Monthly Business Letter Report

A monthly business letter report is to be submitted by the 15th of the month to the NRC Project Manager in accordance with the basic contract. In addition to the previously established requirements of the monthly business letter report, the report will also contain the following:

- * The amount of funds expended for manpower and computer services during the period and cumulative to date.
- * A summary of the progress to date.

7. MEETINGS AND TRAVEL

Three trips of one or two people to the NRC headquarters in Rockville, Maryland should be planned and budgeted over the Fiscal Year 1994 review period (and an additional 4 such trips in Fiscal Year 1995) for meetings to resolve open issues. If used, these meetings will be of one or two days duration. Dates will be mutually agreed upon between the NRC Project Manager and the contractor.

8. NRC FURNISHED MATERIALS

The NRC will provide all necessary materials to facilitate successful completion of this project. This will include the licensee's submittal of all volumes and supplements of EMF-92-139(P).